

## Letter to the Editor

Advance Access publication 2 June 2011

### Left renal venographic findings in children with orthostatic proteinuria

Sir,

We read with interest the article by Mazzoni *et al.* [1]. They summarized previous literature on orthostatic proteinuria associated with nutcracker syndrome (NCS), but the left renal venographic findings in ultrasonographically suspected NCS or incidence of NCS by left renal venography have rarely been reported in their review [1].

Hwang *et al.* [2] recently published an article on left renal venographic findings in children with NCS. They performed left renal venography and pressure tracing in 23 children (mean age 11.5 years, range 9–14 years, male:female = 2:10) with orthostatic proteinuria, which showed 12 cases (52%) of typical NCS diagnosed by high-pressure gradients ( $\geq 4$  mmHg) between left renal vein (LRV) and inferior vena cava (IVC) [2]. Venous pressures of IVC did not differ between the NCS group ( $n = 12$ ) and non-NCS group ( $n = 11$ ) ( $6.50 \pm 3.34$  and  $6.27 \pm 2.80$  mmHg,  $P > 0.05$ ), but pressures of LRV ( $13.21 \pm 3.53$  and  $8.64 \pm 3.20$  mmHg,  $P < 0.05$ ) and pressure gradients between the two veins ( $6.71 \pm 2.54$  and  $2.17 \pm 0.94$  mmHg,  $P < 0.05$ ) in the NCS group were significantly higher than those in the non-NCS group [2]. However, no correlation was observed between the 24-h urinary protein excretion and pressure gradient between the two veins ( $r = 0.152$ ,  $P = 0.636$ ) [2].

Collateral circulations were observed in 4 of the 12 patients with NCS (four periureteral veins, three ascending lumbar veins and one gonadal vein) and the pressure gradient between LRV and IVC was higher in NCS patients without collaterals ( $n = 8$ ) than that in NCS patients with collaterals ( $7.5 \pm 3.3$  and  $5.5 \pm 1.4$  mmHg) [2].

These results suggest that NCS might be closely related to orthostatic proteinuria in children. However, considering the benign nature of orthostatic proteinuria and the invasiveness and radiation exposure of renal venography, it should be avoided in the detection of NCS in children with orthostatic proteinuria. Further studies are necessary to elucidate the cause of orthostatic proteinuria in the non-NCS group and to evaluate whether NCS with orthostatic proteinuria could resolve spontaneously by physical development during childhood like NCS with haematuria suggested by us [3].

**Editorial note:** Dr Mazzoni *et al.* had been invited to reply to this letter but we did not receive a response.

*Conflict of interest statement.* None declared.

<sup>1</sup>Department of Pediatrics,  
The Institute of Kidney  
Disease, Severance  
Children's Hospital, Yonsei  
University College of  
Medicine, Seoul, Korea  
<sup>2</sup>Department of Pediatrics,  
Kyungpook National  
University College of  
Medicine, Daegu, Korea  
E-mail: kkkjhd@yuhs.ac

Jae Il Shin<sup>1</sup>  
Se Jin Park<sup>1</sup>  
Min Hyun Cho<sup>2</sup>  
Ji Hong Kim<sup>1</sup>

1. Mazzoni MB, Kottanatu L, Simonetti GD *et al.* Renal vein obstruction and orthostatic proteinuria: a review. *Nephrol Dial Transplant* 2011; 26: 562–565
2. Hwang SK, Cho MH, Ko CW. Nutcracker syndrome in children with orthostatic proteinuria: diagnosis on the basis of venography. *Korean J Nephrol* 2008; 27: 446–451
3. Shin JI, Park JM, Lee SM *et al.* Factors affecting spontaneous resolution of hematuria in childhood nutcracker syndrome. *Pediatr Nephrol* 2005; 20: 609–613

doi: 10.1093/ndt/gfr299